

## **Appendix 8**

**S&EC Report on:**  
**Threatened / Endangered Species**  
**Cultural Resources**  
**Site Biological Resources Inventory**



## **Soil & Environmental Consultants, PA**

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March 30, 2010  
S&EC Project # 11418.E1

Pittsboro Fire Department  
Attn: Mr. Brian Shaw  
P.O. Box 573  
Pittsboro, NC 27312

Re: **State Historical Records Review / Office of State Archaeology /  
Natural Heritage Program File Search**  
Pittsboro Fire Station Site (+/- 3 acres)  
Chatham County, North Carolina

Dear Mr. Shaw:

In March 2010, S&EC conducted a review of state records at the North Carolina State Historic Preservation Office (SHPO) and North Carolina Office of Archaeology (OSA). The in-depth review included consultation with cultural resources staff and map room searches for sites and structures of historical, cultural, and archaeological significance within a 1-mile radius of the subject property. In addition, a file search for state or federally protected species and significant natural communities within a 5-mile radius was performed through the Natural Heritage Program (NHP) office located in Raleigh, North Carolina. These records were updated utilizing the NHP Virtual Workroom (NHP 2010) and by requesting element occurrence identifications from NHP staff. The USGS map and location of the project site with respect to these occurrences accompanies this report.

### **Findings - NC State Historic Preservation Office**

North Carolina SHPO maintains records and locations of buildings, structures, and objects that are listed by local governments as historic landmarks or those which are listed or eligible for listing on the National Register of Historic Places. The records check at the State Historic Preservation Office revealed no structures on the property that appear on the National Registry (NR), Determination of Eligibility (DOE), Study List (SL), or Locally Designated (LD) lists. North Carolina state law does not provide protection for properties that are determined eligible but not listed in the National Register. Neither placement on the Study List nor a formal determination of eligibility by the Keeper of the National Register has an official role in state environmental review procedures. No structures appearing on the National Registry list will be impacted by this project.

A list of historical structures within a 1-mile radius of the property boundary follows:

CH 364 Jack Johnson House (No Listing)  
CH 365 Robert Bright House (No Listing)  
CH 787 Truss Bridge #147 (SL, DOE)

Many other significant historic sites are documented outside the 1-mile radius of the property boundary. These sites are not labeled on the attached map.

### Findings – NC Office of State Archaeology

North Carolina Office of State Archaeology records archaeological sites and excavations. The OSA record check was performed in March 2010. Archaeological sites in the surrounding area have been documented; however, no significant sites or artifacts are recorded within the site boundaries, and there are no significant or Nationally Registered historic archaeological locations recorded near the site. Due to the sensitivity of the locations of archaeological sites, the sites in the surrounding area are not included on the attached map.

### Findings – NC Natural Heritage Program Records Review

The North Carolina Natural Heritage Program records occurrences of rare plant and animal species, exemplary natural communities, and special animal habitats known to occur in North Carolina. An updated record check of all species listed in Chatham and Lee Counties, NC was performed in March 2010.

#### Chatham and Lee County Federally Listed Endangered and Threatened species:

- 1) Harperella (*Ptilimnium nodosum*) US-Endangered, NC-Endangered \*Documented within 5 Miles of Site
- 2) Red-cockaded Woodpecker (*Picoides borealis*) US-Endangered, NC-Endangered, (Historical documentation in Wake County)
- 3) Cape Fear Shiner (*Notropis mekistocholas*) US-Endangered, NC-Endangered \*Documented within 5 Miles of Site

#### Chatham and Lee County State Listed Species, Federal Species of Concern, and NCNHP Listed Significantly Rare Species:

The subject property is located on the Colon USGS quadrangle. No Significant Natural Heritage Areas or Natural Heritage element occurrences of rare plants or animals are located within the property boundaries. Two federally protected (Endangered) species are documented within a 5-mile radius of the property. Several Significant Natural Heritage Areas and element occurrences of rare plants, animals, and exemplary natural communities are located within a 5-mile radius of the subject property. These areas and occurrences are listed below. Due to the sensitivity of the locations of rare species, the element occurrences for plants, animals, and natural communities within a 5-mile radius of the Pittsboro Fire Station site are listed solely by their category on the attached map.

#### Significant Natural Heritage Areas within 5 Miles of the Pittsboro Fire Station Site:

Upper Rocky River Aquatic Habitat
Lower Rocky River/Lower Deep River Aquatic Habitat
Bear Creek Aquatic Habitat
Rocky River Dragonfly Riffles
White Pines Natural Area
Lower Deep River Slopes
Deep River Bend
Endor Iron Furnace Natural Area
Middle Deep River Aquatic Habitat

**Exemplary Natural Communities and Assemblages within 5 Miles of the Pittsboro Fire Station Site:**

Colonial Wading Bird Colony
Rocky Bar and Shore
Dry-Mesic Oak-Hickory Forest
Dry Oak-Hickory Forest
Mesic Mixed Hardwood Forest (piedmont subtype)
Piedmont/Mountain Levee Forest
Piedmont Mafic Cliff
Floodplain Pool
Basic Mesic Forest (piedmont subtype)
Piedmont/Coastal Plain Heath Bluff

**Rare Plants within 5 Miles of the Pittsboro Fire Station Site:**

<u>Scientific Name</u>	<u>Common Name</u>	<u>NC Status</u>	<u>US Status</u>	<u>County Status</u>
<i>Ptilimnium nodosum</i>	Harperella	E	E	Chatham – Current, Lee – Historical
<i>Dichanthelium annulum</i>	Ringed Witch Grass	SR-P	None	Chatham – Historical, Lee – Historical
<i>Enemion biternatum</i>	Eastern Isopyrum	SR-P	None	Chatham – Historical, Lee – Current
<i>Fothergilla major</i>	Large Witch-alder	SR-T	None	Chatham – Current
<i>Gillenia stipulata</i>	Indian Physic	SR-P	None	Chatham – Historical, Lee – Historical
<i>Isoetes virginica</i>	Virginia Quillwort	SR-L	FSC	Chatham - Historical
<i>Paspalum fluitans</i>	Horsetail Crown Grass	SR-P	None	Chatham - Historical
<i>Carex jamesii</i>	James's Sedge	SR-P	None	Lee - Current
<i>Phacelia covillei</i>	Buttercup Phacelia	SR-T	FSC	Chatham – Current, Lee – Current

**Rare Animals within 5 Miles of the Pittsboro Fire Station Site:**

<u>Scientific Name</u>	<u>Common Name</u>	<u>NC Status</u>	<u>US Status</u>	<u>County Status</u>
<i>Notropis mekistocholas</i>	Cape Fear Shiner	E	E	Chatham – Current, Lee – Current
<i>Alasmidonta undulata</i>	Triangle Floater	T	None	Chatham – Current, Lee – Current
<i>Alasmidonta varicosa</i>	Brook Floater	E	FSC	Chatham - Current
<i>Fusconaia masoni</i>	Atlantic Pigtoe	E	FSC	Chatham - Current
<i>Gomphus septima</i>	Septima's Clubtail	SR	FSC	Chatham – Current, Lee – Current
<i>Strophitus undulatus</i>	Creeper	T	None	Chatham – Current, Lee – Current
<i>Villosa constricta</i>	Notched Rainbow	SC	None	Chatham – Current, Lee – Historical
<i>Villosa delumbis</i>	Eastern Creekshell	SR	None	Chatham - Current
<i>Villosa vaughaniana</i>	Carolina Creekshell	E	FSC	Chatham - Current

**US-E:** Federally Endangered

**US-T:** Federally Threatened

**US-FSC:** Federal Species of Concern

**US-C:** Federal Candidate

**NC-E:** North Carolina Endangered

**NC-T:** North Carolina Threatened

**NC-SC:** North Carolina Special concern

**NCNHP-SR:** North Carolina Natural Heritage Program designated Significantly Rare

**-P:** Peripheral, **-T:** Throughout Range, **-L:** Local

"Endangered Species" (E) means any native species documented by biological research and inventory to be in danger of extirpation throughout all or a significant portion of its range within the state and to have no more than five occurrences in the state, and any species determined to be an "endangered species" pursuant to the federal Endangered Species Act.

"Threatened Species" (T) means any native species documented by biological research and inventory to be likely to become an endangered species within the foreseeable future throughout all or a significant portion of its range within the state and to have no more than nine occurrences in the state, and any species determined to be a "threatened species" pursuant to the federal Endangered Species Act, except for such species determined to be endangered by the Commissioner in accordance with section 4 of this act.

"Candidate" (C) "Taxa for which the [Fish and Wildlife] Service has on file enough substantial information on biological vulnerability and threat(s) to support proposals to list them as endangered or threatened. Proposed rules have not yet been issued because this action is precluded at present by other listing activity. Development and publication of proposed rules on these taxa are anticipated. The Service encourages State and other Federal agencies as well as other affected parties to give consideration to these taxa in environmental planning." (Federal Register, February 28, 1996). Taxa formerly in 'Category 1' are now considered as 'Candidate'.

"Species of Special Concern" (SC) means any native plant species or any native nonharvested wildlife species documented by scientific research and inventory to have a naturally restricted range or habitat in the state, to be at a low population level, to be in such high demand by man that its unregulated taking would be detrimental to the conservation of its population or has been extirpated from the state.

"Significantly Rare" (SR) Species which are very rare in North Carolina, generally with 1-20 populations in the state, generally substantially reduced in numbers by habitat destruction (and sometimes also by direct exploitation or disease). These species are generally more common somewhere else in their ranges, occurring in North Carolina peripherally to their main ranges, mostly in habitats which are unusual in North Carolina. Also included are some species with 20-100 populations in North Carolina, if they also have only 50-100 populations rangewide and are declining.

## **Summary**

The records search at the Natural Heritage Program revealed that the above-listed species occur within a 5-mile radius of the project boundaries. Two Federally protected species are documented within a 5-mile radius of the project boundary. The file search at the State Historic Preservation Office produced no records of structures on property listed on the National Registry (NR), Determination of Eligibility (DOE), Study List (SL), or Locally Designated (LD) lists. The records search at the North Carolina Office of State Archaeology revealed no documented historical archaeological sites, surveys, or artifacts within the project boundaries. This project will not occur in an area of essential fish habitat (NOAA 2010), nor will this project impact an area that is designated critical habitat for endangered species.

If you have any questions or need additional services, feel free to contact S&EC.

Sincerely,



David Gainey  
Environmental Specialist / Project Manager



David Cooper  
Staff Biologist

Attachments:

- 1) Natural Heritage, Cultural, and Historic Areas Map

**References**

[NHP] North Carolina Natural Heritage Program. 2010. Internet-based search: Natural Heritage Program Virtual Workroom <<http://www.ncnhp.org>> Accessed 22 March 2010.

----- 2010. Internet-based search:

<<http://www.nconemap.com/GetData/DownloadFTP/tabid/286/Default.aspx>> Accessed 22 March 2010.

[NOAA] National Oceanic and Atmospheric Administration. 2010. Internet-based search: NOAA Fisheries Essential Fish Habitat Mapper  
<[http://sharpfin.nmfs.noaa.gov/website/EFH\\_Mapper/map.aspx](http://sharpfin.nmfs.noaa.gov/website/EFH_Mapper/map.aspx)> Accessed 22 March 2010.

#### 4.4. Biological Resources

The biological assessment of the proposed Pittsboro Fire Station area included both field reconnaissance and investigation of North Carolina Natural Heritage Program (NHP) records. The overall condition of the site with respect to its existing vegetation and wildlife species composition was observed. During the field reconnaissance, no specific search was performed for any taxon.

Before initiating field reconnaissance, maps were prepared in ESRI ArcMap 9.2© and a preliminary investigation of the natural heritage elements near the property was performed using the NHP Virtual Workroom (NHP 2010). Topographical maps were used to aid in locating wetland habitat types. Optimal survey windows for rare species were determined using publications, websites, and personal communications. Transects were run on foot throughout the property. Groundtruthing of specific habitat types and ecotones was done in the field. A Garmin 60CS GPS unit was used for navigation and further documentation of potential habitats. 2007 color aerial images, LIDAR-based 2-foot topographic maps, and USGS topographic quadrangle maps were all used during preliminary site assessment and groundtruthing.

A preliminary list of animal and plant species observed during the field reconnaissance is included. It should be noted that this species list is not a complete inventory of all plants and animals which may be present on the site.

##### 4.4.1. Threatened and Endangered Species and Critical Habitat

Species that are federally listed as Endangered or Threatened are protected under the Endangered Species Act (ESA) of 1973, as amended (16 U.S.C. 1531 et seq.). The U.S. Fish and Wildlife Service (USFWS) and NHP lists three protected species that are known or suspected to occur in Chatham and Lee counties, NC. Federal Species of Concern (FSC) are not protected by the ESA and therefore have not been addressed within this Environmental Assessment.

The three federally protected species documented in Chatham and Lee Counties, NC are:

- Red-cockaded Woodpecker (*Picoides borealis*) – Endangered
- Harpersella (*Ptilimnium nodosum*) – Endangered
- Cape Fear Shiner (*Notropis mekistocholas*) – Endangered

No potentially suitable habitat for any of these three species is located within the area evaluated for the Pittsboro Fire Station.

NHP Records within a 5-mile radius of the boundary of the Pittsboro Fire Station site were investigated on March 22, 2010. A file search for federally protected species within a 5-mile radius of the evaluated area was performed through the NHP office located in Raleigh, North Carolina. These records were updated utilizing the NHP Virtual Workroom (NHP 2010) and by requesting element occurrence identifications from NHP staff.

No GIS polygons of NHP element occurrence records overlap the proposed project area. As previously stated, there is no potentially suitable habitat for any federally protected species within the proposed Pittsboro Fire Station site.

The Cape Fear Shiner is documented to occur in the Rocky and Deep Rivers within a 5-mile radius of the boundary of the Pittsboro Fire Station site.

Harperella is documented to occur in the aquatic habitat below the confluence of the Rocky and Deep Rivers within a 5-mile radius of the boundary of the Pittsboro Fire Station site.

Descriptions of the appearance, range, and habitat of the three federally protected species documented to occur in Chatham and Lee Counties, NC follow:

**RED-COCKADED WOODPECKER** (*Picoides borealis*) US – Endangered, NC – Endangered

**DESCRIPTION:** The Red-cockaded Woodpecker (RCW) is a medium-sized woodpecker with a conspicuous white patch on each cheek. The red “cockade” for which the species is named is usually inconspicuous. The back is black, with white bars, and the belly is spotted and barred.

**RANGE AND POPULATION LEVEL:** In North Carolina, the RCW is most common in the Sandhills and Coastal Plain, where mature stands of Longleaf Pine still occur. In the Piedmont, the species is less common but has been reported. Populations of the RCW have increased in recent years due to intensive habitat management practices including prescribed burning, and direct stewardship efforts such as nest cavity creation.

**HABITAT:** The RCW is a habitat specialist, requiring mature growth of pine forest with a grassland component underneath. For nesting/roosting habitat, open stands of pine containing trees 60 years old and older are needed. Red-cockaded woodpeckers need live, large older pines in which to excavate their nest cavities. Longleaf Pines (*Pinus palustris*) are most commonly used, but other species of southern pine are also acceptable. Dense stands (stands that are primarily hardwoods, or that have a dense hardwood understory) are avoided. Foraging habitat is provided in pine and pine hardwood stands 30 years old or older with foraging preference for pine trees 10 inches or larger in diameter. In good, moderately stocked, pine habitat, sufficient foraging substrate can be provided on 80 to 125 acres.

**ON-SITE HABITAT:** No potentially suitable nesting or foraging habitat is located within the proposed Pittsboro Fire Station site boundaries.

**CAPE FEAR SHINER** (*Notropis mekistocholas*) US – Endangered, NC – Endangered

**DESCRIPTION:** The Cape Fear Shiner (US-Endangered, NC-Endangered) is a small shiner with a dark lateral stripe that enters the snout area, a dark caudal spot, 7-8 rays on the anal fin, and a long, coiled intestine (Menhinick 1991).



**RANGE AND POPULATION LEVEL:** The Cape Fear Shiner is endemic to North Carolina, and is found only in the Cape Fear river basin near the Fall line (Menhinick 1991).

**HABITAT:** Sandy and rocky pools and runs of small to medium rivers are typical habitat. The following excerpt from the NC Wildlife Resources Commission website describes the habitat of the Cape Fear Shiner in detail:

“The Cape Fear Shiner is most often found in shallow, rocky shoals within main river channels. In winter months, they may migrate into smaller tributary streams. The most obvious features of their preferred habitat are large islands and bars of water willow, *Justicia americana*. This species prefers clean substrates composed of gravel, cobble, and boulders.”

Threats to the Cape Fear Shiner include dams, runoff from agriculture and impervious surfaces, siltation, and predation by the invasive exotic Flathead Catfish (*Pylodictis olivaris*) and other predators including wading birds.

**ON-SITE HABITAT:** No potentially suitable habitat for the Cape Fear Shiner is located within the Pittsboro Fire Station site boundaries. Based on the existing topography and roads surrounding the site, drainage from the site is likely to infiltrate prior to reaching tributaries of the Rocky or Deep Rivers. Proper erosion and sediment control and stormwater devices will adequately prevent runoff from the site.

**HARPERELLA** (*Ptilimnium nodosum*) US – Endangered, NC – Endangered

**DESCRIPTION:** Harperella is a small obligate wetland plant with thin, hollow, cylindrical leaves and white flowers.

**RANGE AND POPULATION LEVEL:** Harperella is known from fewer than 15 populations throughout its range. In North Carolina, it has been found in only two counties; Chatham and Granville, within the last 20 years.

**HABITAT:** Radford (1968) lists the habitat of Harperella as “savannahs and wet ditches”, while the US Fish and Wildlife Service website states that the species can be found in two habitat types; “(1) rocky or gravel shoals and margins of clear, swift-flowing stream sections; and (2) edges of intermittent pineland ponds in the coastal plain”. Similarly, the Center for Plant Conservation website notes its habitat as “(1) shoals and margins of clear, swift-flowing streams and (2) on the coastal plain along the edges of shallow, intermittently flooded ponds and wet meadows.”

**ON-SITE HABITAT:** No potentially suitable habitat for Harperella is located within the Pittsboro Fire Station site boundaries. There are no on-site streams or wetlands. Based on the existing gradually sloping topography and the roads surrounding the site, drainage from the site is likely to infiltrate prior to reaching tributaries of the Rocky or Deep Rivers. Proper erosion and sediment control and stormwater devices will adequately prevent runoff from the site.

#### 4.4.2. Wildlife and Fish

Wildlife habitat within the area evaluated for the proposed Pittsboro Fire Station consists mainly of upland Dry-mesic Oak-hickory forest greater than 30 years old edged by managed herbaceous areas within road rights-of-way. One very small, manmade temporary pool provides aquatic breeding habitat for salamanders; however, this pool may dry each year before larvae emerge in the late spring to early summer. Numerous stump holes and old, decomposing tree stumps are located within the site boundaries, and provide refugia for reptiles, amphibians, and small mammals. The cover types within the area proposed for the Pittsboro Fire Station are approximately shown in [Figure 2](#).

Wildlife within the area evaluated for the proposed Pittsboro Fire Station includes various game and nongame species. Wildlife taxa observed during the on-site biological investigation include: White-tailed Deer (*Odocoileus virginianus*) (scat and skeletal remains), Pine Warbler (*Dendroica pinus*), Southeastern Five-lined Skink (*Eumeces inexpectatus*), Marbled Salamander (*Ambystoma opacum*) (larvae), and Spotted Salamander (*Ambystoma maculatum*) (egg masses). A full [species list](#) of plant and animal taxa observed during the on-site biological investigation is provided.

Other vertebrate wildlife species expected to utilize the Pittsboro Fire Station site as permanent or transitory habitat include, but are not limited to:

**Mammals:** Eastern Cottontail, Southern Short-tailed Shrew, Eastern Mole, Gray Squirrel, Southern Flying Squirrel, White-footed Mouse, Pine (Woodland) Vole, White-tailed Deer, Virginia Opossum, Raccoon, Gray Fox, Red Fox, Coyote, and bat species including Big Brown Bat, Red Bat, and others.

**Birds:** Many neotropical migrant species, Wild Turkey, woodpeckers including Pileated Woodpecker, Downy Woodpecker, Hairy Woodpecker, Red-headed Woodpecker, Red-bellied Woodpecker, Northern Flicker, and Yellow-bellied Sapsucker, raptors including Turkey Vulture, Black Vulture, Red-tailed Hawk, Red-shouldered Hawk, Great-horned Owl, Barred Owl, Eastern Screech Owl, and Cooper's Hawk, Mourning Dove, American Crow, Carolina Chickadee, Tufted Titmouse, Ruby-crowned Kinglet, White-breasted Nuthatch, Carolina Wren, Northern Cardinal, White-throated Sparrow, Dark-eyed Junco, American Goldfinch, and others.

**Reptiles:** Eastern Box Turtle, Eastern Slender Glass Lizard, Green Anole, Northern Fence Lizard, Eastern Five-lined Skink, Southeastern Five-lined Skink, Broadhead Skink, Ground Skink, Eastern Worm Snake, Black Racer, Ringneck Snake, Rat Snake, Eastern Hognose Snake, Eastern Kingsnake, Rough Green Snake, Brown Snake, Northern Redbelly Snake, Rough Earth Snake, Smooth Earth Snake, Eastern Garter Snake, and Copperhead.

**Amphibians:** Northern Cricket Frog, Marbled Salamander, Spotted Salamander, American Toad, Fowler's Toad, Cope's Gray Treefrog, and Slimy Salamander (complex).

There is no potential fish or shellfish habitat within the area evaluated for the Pittsboro Fire Station. The only surface water on-site consists of a small, (approximately 5'x5') shallow, manmade temporary pool. Significant fish and mussel habitat including the Rocky River and tributaries of the Rocky and Deep Rivers exists within 1 mile of the site; however, the proposed construction of the Pittsboro Fire Station is not expected to affect these waters.

Vegetation composition is relatively uniform across the site. The tree stratum consists mainly of Shagbark Hickory (*Carya ovata*), Eastern Red Cedar (*Juniperus virginiana*) Loblolly Pine (*Pinus taeda*), White Oak (*Quercus alba*), Southern Red Oak (*Quercus falcata*), and Northern Red Oak (*Quercus rubra*). Shrubs on-site are sparse and include Highbush Blueberry (*Vaccinium corymbosum*) and Arrowwood (*Viburnum dentatum*). Herbaceous vegetation in the forested areas is also sparse, and includes Sedges (*Carex sp.*), Spotted Wintergreen (*Chimaphila maculata*), Saint John's Wort (*Hypericum sp.*), and Crane-fly Orchid (*Tipularia discolor*). Vines are infrequent, and include Carolina Jessamine (*Gelsemium sempervirens*), Japanese Honeysuckle (*Lonicera japonica*), Greenbrier (*Smilax sp.*), and Muscadine (*Vitis rotundifolia*).

Although the site itself contains significant microhabitat for terrestrial wildlife, it is entirely bounded by paved roads and/or human dwellings, and is not contiguous with other, large tracts of undisturbed habitat. This fragmentation diminishes the overall habitat quality of the site. Approximately 0.34 acres of the approximately 3.5-acre site is expected to be cleared to accommodate the construction of the proposed Pittsboro Fire Station. The acreage to be cleared is immediately adjacent to Walter Bright Road (SR 2217), and the majority of the forested areas on-site will remain undisturbed. **The location of the temporary pool is not expected to be directly impacted by construction.** The construction of the proposed Pittsboro Fire Station is not expected to have a significant negative affect on wildlife or wildlife habitat.

#### 4.5. Cultural Resources

A records review at the North Carolina State Historic Preservation Office (SHPO) and the Office of State Archaeology (OSA) was conducted on March 30, 2010.

No historic structures are documented by SHPO within the area evaluated for the proposed Pittsboro Fire Station. Three historic structures or areas exist within an approximately 1-mile radius of the boundary of the evaluated area; however, these will not be affected in any way by the proposed project.

No archaeological sites have been identified by OSA within the area evaluated for the proposed Pittsboro Fire Station. Archaeological sites have been identified within a 1-mile radius of the boundaries of the proposed Pittsboro Fire Station site. These sites are located primarily on bluffs overlooking the Rocky River. According to Ms. Susan Myers of OSA, the proposed Pittsboro Fire Station project area is unlikely to be of archaeological significance and does not warrant excavation or further assessment (pers. comm. 3/30/2010).

The proposed Pittsboro Fire Station will not affect any areas of archaeological or historical value.

## REFERENCES

- [CPC] Center for Plant Conservation. 2007. internet-based search.  
<<http://www.centerforplantconservation.org>> Accessed 13 February 2007.
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**Site Photographs of the Proposed Pittsboro Fire Station Area (March 25, 2010)**



**Typical Managed Herbaceous Area bordering Dry-mesic Oak-hickory Forest**



**Typical Dry-mesic Oak-hickory Forest**



**Small Temporary Pool**

**Overall Species List of Plants and Animals Observed  
on the proposed Pittsboro Fire Station Site (March 25, 2010)**

**Plants**

• **Trees**

- Red Maple (*Acer rubrum*)
- Shagbark Hickory (*Carya ovata*)
- Mockernut Hickory (*Carya tomentosa*)
- Beech (*Fagus grandifolia*)
- White Ash (*Fraxinus americana*)
- American Holly (*Ilex opaca*)
- Eastern Red Cedar (*Juniperus virginiana*)
- Sweet Gum (*Liquidambar styraciflua*)
- Tulip-tree (*Liriodendron tulipifera*)
- Southern Magnolia (*Magnolia grandiflora*)
- Sourwood (*Oxydendrum arboreum*)
- Loblolly Pine (*Pinus taeda*)
- Black Cherry (*Prunus serotina*)
- White Oak (*Quercus alba*)
- Southern Red Oak (*Quercus falcata*)
- Willow Oak (*Quercus phellos*)

• **Shrubs**

- Autumn Olive (*Elaeagnus umbellata*) (one seedling)
- Highbush Blueberry (*Vaccinium corymbosum*)
- Arrowwood (*Viburnum dentatum*)

• **Vines**

- Carolina Jessamine (*Gelsemium sempervirens*)
- Japanese Honeysuckle (*Lonicera japonica*)
- Round-leaved Greenbrier (*Smilax rotundifolia*)
- Muscadine (*Vitis rotundifolia*)

• **Herbaceous**

- Wild Garlic (*Allium vineale*)
- Various Sedges (*Carex* sp.)
- Spotted Wintergreen (*Chimaphila maculata*)
- Bursting Heart (*Euonymus americana*)
- Saint John's Wort (*Hypericum* sp.)
- Soft Rush (*Juncus effusus*)
- Woodsorrel (*Oxalis* sp.)
- Narrowleaf Plantain (*Plantago lanceolata*)
- Curly Dock (*Rumex crispus*)
- Crane-fly Orchid (*Tipularia discolor*)
- Vetch (*Vicia* sp.)

## Animals

- Mammals

- White-tailed Deer (*Odocoileus virginianus*) (scat and skeletal remains)

- Birds

- Pine Warbler (*Dendroica pinus*)
- Woodpeckers (evidence of woodpecker holes in dead, standing loblolly pine tree; no birds seen or heard)

- Reptiles

- Southeastern Five-lined Skink (*Eumeces inexpectatus*) (juvenile under rock)

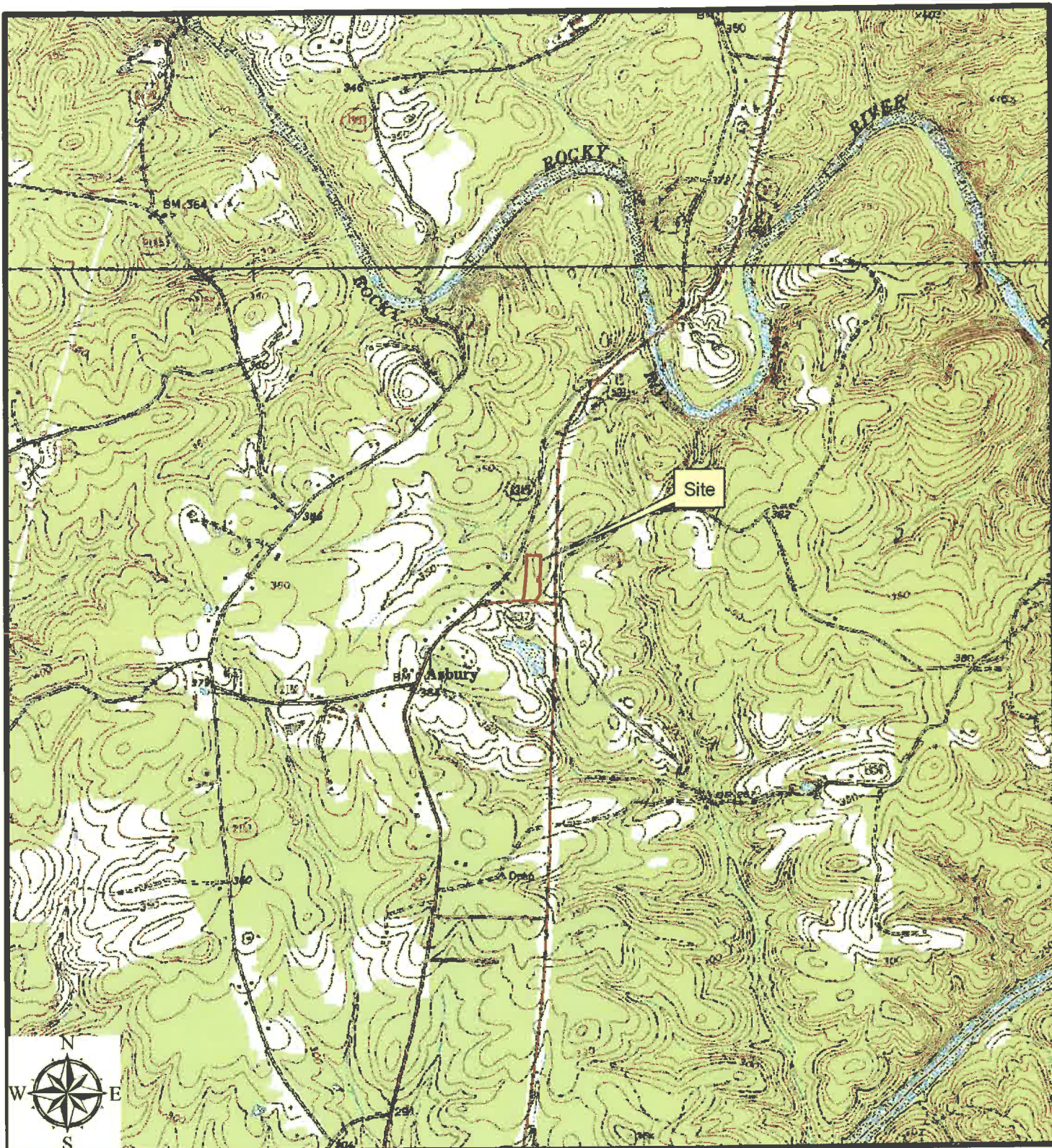
- Amphibians


- Spotted Salamander (*Ambystoma maculatum*) (egg masses in temporary pool)
- Marbled Salamander (*Ambystoma opacum*) (larvae in temporary pool)

- Invertebrates

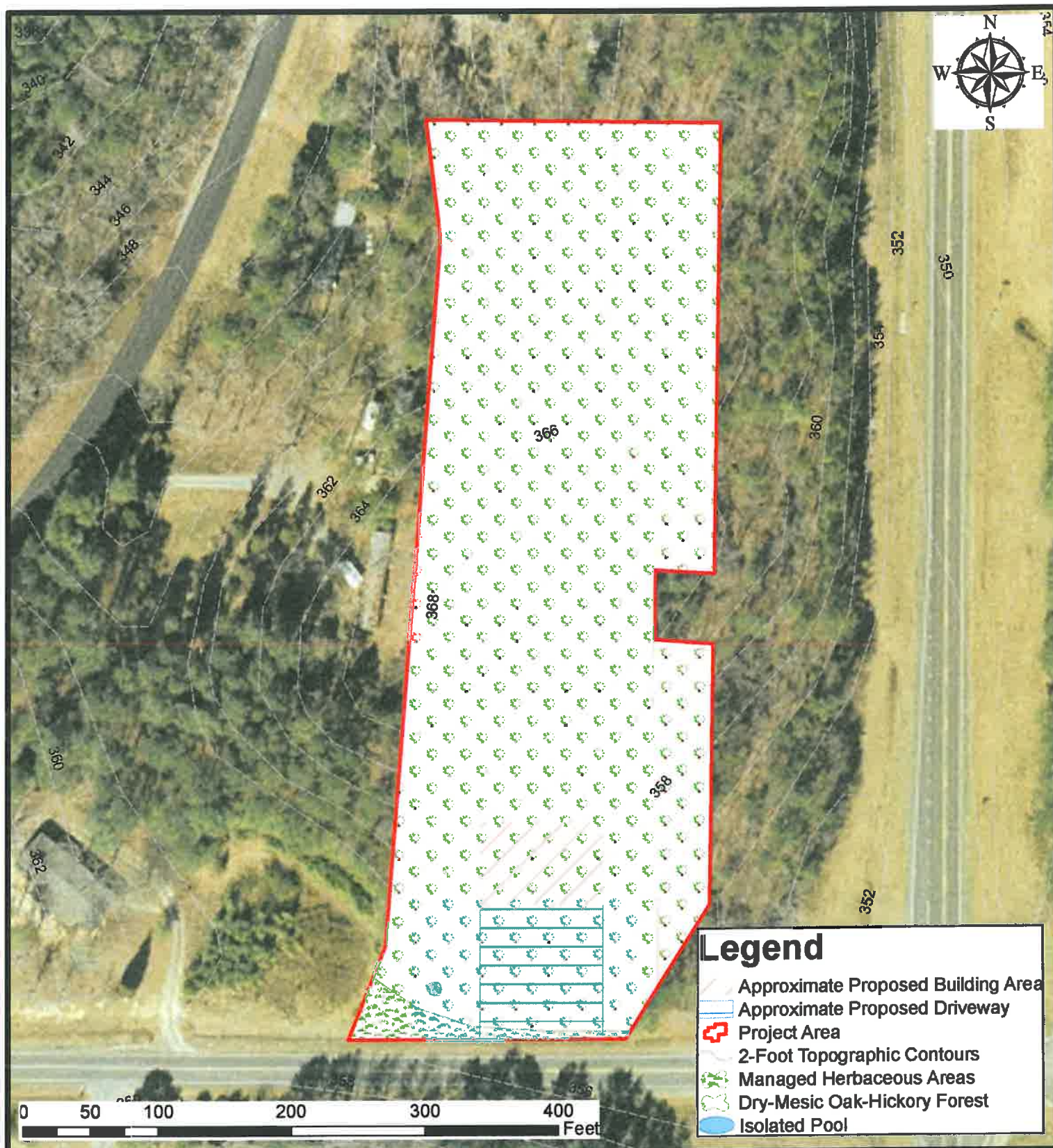
- Green June Beetle (*Cotinus nitida*) (dead adult under log)
- Bess Beetle (*Odontotaenius disjunctus*)
- Cabbage White Butterfly (*Pieris rapae*)
- Red Imported Fire Ant (*Solenopsis invicta*)
- Centipede (*Theatops posticus*)
- Yellow Jacket (*Vespula* sp.)
- Terrestrial Isopods (Pillbugs)





Project No. 11418.EI	Figure 1-1:24k USGS Quadrangle Pittsboro Fire Department Site Chatham County, NC		<b>Soil &amp; Environmental Consultants, PA</b> 11010 Raven Ridge Rd. • Raleigh, NC 27614 (919) 846-5900 • (919) 846-9467 Web Page: <a href="http://www.SandEC.com">www.SandEC.com</a>
Project Mgr.: DG			
Scale: 1" = 2000'			
3/22/2010	Colon and Pittsboro Quadrangles		





Project No.  
11418.EI

Project Mgr.:  
DG

Scale:  
1" = 100'

3/22/2010

**Figure 2.**  
**Cover Type Map**  
Pittsboro Fire  
Department Site  
Chatham County, NC

Chatham County  
2007 Aerial Image

**S&EC**

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